

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claims 1-7 (canceled)

8. (original) A system to remove a first material located on a top surface of a workpiece, the system comprising:

a pad positioned proximate to the workpiece so that a front surface of the pad contacts an exposed surface of the first material, the pad comprising a second material;

means for mechanically moving the front surface of the pad against the exposed surface of the first material to initiate a chemical reaction between the first material and the second material, the chemical reaction yielding a reaction product; and

a chemical solution to remove the reaction product, the reaction product being soluble into the chemical solution and the first material and second material not being substantially soluble into the chemical solution.

9. (new) An apparatus for removing material on a surface of a workpiece comprising:

a pad positioned proximate to the workpiece having at least a first material configured to react with the material on the surface of the workpiece;

a workpiece holder configured to hold the workpiece and produce relative motion between the pad and the workpiece to create a reaction product from a chemical reaction between the first material and the material on the surface of the workpiece; and

a solution configured to contact the reaction product for removal of the reaction product.

10. (new) The apparatus of claim 9, wherein the pad includes abrasives configured to abrade the material on the surface of the workpiece.

11. (new) The apparatus of claim 10, wherein the pad removes the reaction products.

12. (new) The apparatus of claim 10, wherein the pad is configured with strips of the first material and strips of abrasive material.
13. (new) The apparatus of claim 9, wherein the material on the surface of the workpiece is copper and the first material oxidizes the copper.
14. (new) The apparatus of claim 9, wherein the workpiece holder vibrates without contacting the pad.
15. (new) The apparatus of claim 9, wherein the workpiece holder is configured to rotate, move vertically, or laterally with respect to the pad.
16. (new) The apparatus of claim 15, wherein the workpiece holder maintains a predetermined distance from the pad to automatically stop the chemical reaction between the first material and the material on the surface of the workpiece.
17. (new) The apparatus of claim 9 further comprising a second pad configured to polish the reaction product and the material on the surface of the workpiece and to planarize the surface.
18. (new) The apparatus of claim 9, wherein the solution dissolves the reaction product.
19. (new) The apparatus of claim 9, wherein the solution includes another agent.